BOROUGH OF TORQUAY.

ANNUAL REPORT

OF THE

Medical Officer of Health

FOR THE YEAR 1922.

BY

THOMAS DUNLOP, M.B., C.M., D.P.H.

TOGETHER WITH SUMMARY OF

Reports of the Sanitary Inspectors

AND

Meteorological Observer.

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INDEX.

To His Worship the Mayor, Aldermen, and Councillors of the Borough of Torquay.

Ladies and Gentlemen,

I have the honour to present to you my Annual Report on the Sanitary circumstances of the Borough and the Health of the inhabitants during the year 1922.

The report is drafted on similar lines to that of last year, and gives full details of the climate and physical circumstances of the town.

I have to thank my colleagues and members of the Sanitary department for their assistance and hearty co-operation.

I have also to express my appreciation of the cordial support afforded to me by the Council, and especially the Members of the Sanitary Committee.

I am, Ladies and Gentlemen,

Your obedient Servant,

THOMAS DUNLOP.

BOROUGH OF TORQUAY.

Area of the Borough, 3,996 acres.

Assessable value, £208,730.

Population—Census (1911), 38,772.

" " (1921), 39,432.

" Registrar-General's Estimate for Statistical Purposes for 1922, 33,690.

Number of separate occupiers—Census (1911), 8,459.

Density of population, 9 persons per acre.

Corrected death rate (1922), 17·5 per 1,000. Average for previous five years. 16·7 per 1,000.

Birth rate, 14·5 per 1,000. Average for previous five years, 14·7 per 1,000.

Infantile mortality (1922), 47. Average for previous five years, 61.

Death rate from zymotic disease, ·12 per 1,000.

Mean annual temperature, 51·1.

Hours of bright sunshine recorded, 1771·5.

Total rainfall, 36·9 inches.

BOROUGH OF TORQUAY.

Population.

When I prepared last year's annual report and had the result of the Census before me I felt that I had a sound basis to work on, but when the report was in print the Registrar General's estimate of the population to be used in the calculation of births and deaths was received. The census figure of the population was 39,432 while the Registrar General's estimate was 33,660, a difference of 5,772. The explanation given by the Registrar General was that owing to the delay in taking the census, from April to June, the summer holidays had commenced and that our visitors accounted for the difference. As all visitors deaths are transferred to their own sanitary areas it is essential that a correct residential population should be used in calculating the statistics of the Borough, although the census figures can rightly be used for other purposes. The Registrar General estimates the population of the Borough for 1922 at 33,690 and this figure is used in the calculation of our various rates.

The Borough is divided into nine wards, but as the census returns giving their populations is not yet to hand I am unable to give them.

Physical Features and General Character of the District.

The town is situated on a promontory, being practically surrounded by the sea on three sides. This promontory is formed by hilly ridges, running N.E. and S.W. The principal heights—the Warberry Hill, 448 feet, and the Lincombe Hill, 372 feet—are composed of the Lower Devonian grits and slates. The lesser heights, such as the Braddons, Waldon Hill, and Chapel Hill, are formed of Middle Devonian Limestone, which rests above the grits and slates mentioned.

On each side of this central area, viz., at St. Mary-church and Chelston, rocks higher in the Geological scale for the most part prevail. These rocks belong to the Permian formation, and consist of beds of Breccia—a kind of conglomerate—and sand stone of a deep red colour.

There is very little clay in any portion of the area, and what does occur is of the nature of marl, and is confined to the lower levels of certain valleys or depressions, so that rain is not detained on the surface, as it rapidly disappears through these rather pervious rocks and soils.

It is on the sides of these hills or ridges that most of the houses are built, the main roads and streets following the lines of the valleys. Thus the largest portion of the district is afforded protection from the cold winds of the North and East, a fact that is strikingly proved by the luxuriant growth of semi-tropical shrubs and plants in both public and private gardens.

Torquay is essentially a residential town and health resort, consequently a large proportion of its inhabitants are villa residents, while the remaining portion may be said to obtain a livelihood by catering for them. There are numerous large hotels, and many up-to-date boarding houses for the accomodation of visitors. There are no manufactories in the district.

During the summer and early autumn there is a very large influx of visitors, who are catered for by the inhabitants of the smaller houses.

CLIMATE.

The position of the town, built as it is on a promontory, surrounded on two sides by the sea, accounts to some extent, for the mild and equable temperature experienced during winter. The meteorological records show that we enjoy a large proportion of sunshine at this period of the year. There is also an almost complete absence of fog.

The benefit of living under such climatic conditions must be apparent to all, but it is inestimable to those who are asthmatical, or who are sufferers from chronic bronchitis. To the aged and infirm, who are extremely sensitive to every change of temperature, life under such conditions is prolonged and made worth living.

The bright sunshine and the possibility of being constantly in the open air, is most advantageous to children, and those who are delicate have every chance of growing up strong and healthy.

The Summer Climate. Year by year the town becomes more popular as a holiday resort. It is unquestionable that, during the hottest days, the maximum temperature here is five

to ten degrees lower than that recorded in London and the Midlands. It stands to reason, if one considers the position of Torquay, flanked by the sea and with Dartmoor in the rear, it is constantly fanned by cool breezes, from one or other directions. It seems difficult to imagine a more delightful spot to spend a holiday in. Boating, bathing and fishing of the best, whilst in the neighbourhood are innumerable places of beauty and interest, which are easily accessible by sea, coach or rail. These facts are amply proved by the constantly increasing number of visitors who, year after year, spend their summer holidays here.

METEOROLOGY.

Full details of the Meteorology of the Borough will be seen in the appended Annual Report of the Borough Meteorologist, but the following resumé of the climatic conditions may be of interest:—

	1917	1918	1919	1920	1921	1922
Highest Maximum Temperature ..	77·3	78·1	80·4	73·9	85·8	75·1
Lowest Maximum ,, ..	24·9	24·6	25·9	25·3	29·1	30·3
Mean Maximum ,, ..	55·5	57·8	56·7	57·4	59·9	56·4
Mean Minimum ,, ..	44·9	47·1	45·3	47·4	48·6	45·9
Mean of Maximum and Minimum ..	50·2	52·5	51·0	52·4	54·3	51·1
Difference from Average ..	+1·1	+1·2	—2·6	+1·1	+3·4	—0·7
Number of Days on which Rain fell ..	173	212	178	189	120	136
Total fall in Inches ..	25·5	29·9	30·08	33·59	20·8	33·9
Number of Hours Bright Sunshine ..	1716	1856	1860·3	1595	2016	1771·5

MEDICAL BATHS.

The Corporation possess an up-to-date installation of Medical Baths, where all the best known varieties of treatment can be obtained. All douches can be administered with either sea water or fresh water at the requisite temperatures.

There is also an excellent sea water Swimming Bath, 90ft. x 30ft., the water being kept at a suitable temperature.

VITAL STATISTICS.

Death Rate.—The total deaths registered during 1922 was 581, of whom 66 visitors were transferable to other districts, whilst the deaths of 77 residents dying outside the Borough have to be added. The net total is therefore 592, of whom 265 were males and 327 females.

The death rate is equal to 17·5 per 1,000 per annum, compared with 15·8 in 1921. The average death rate for the past 5 years was 16·7. The death rate for England and Wales in 1922 was 12·9 per 1,000, and that for the 155 smaller towns 11·7.

In order to render it possible to compare the death rate here with that of the country as a whole, it has to be corrected for age and sex distribution. The Registrar-General supplies a factor ·8730, by which the Torquay rate has to be multiplied. This gives us a rate corrected for age and sex distribution equal to 15·3 per 1,000.

Of the 592 deaths

		Percentage of Total Deaths.
23	were under 1 year of age - - -	equals 3·9
4	were 1 year and under 2 years - -	,, ·7
9	were 2 years and under 5 years - -	,, 1·5
11	were 5 years and under 15 years - -	,, 1 8
20	were 15 years and under 25 years - -	,, 3·4
65	were 25 years and under 45 years - -	,, 11·0
143	were 45 years and under 65 years - -	,, 24·2
317	were 65 years and over - - -	,, 53·5
592	at all ages	100·0

It will thus be seen that 317, or 53·5 per cent., were persons aged 65 and upwards.

There were 19 inquests; and 11 uncertified deaths were recorded.

Ward Distribution of Deaths.

Ward.	Deaths at all ages.	Under 1 year.
Torre	68	1
Waldon	63	1
Upton	74	4
Ellacombe ..	108	6
Strand	39	3
Torwood	43	1
St. Mary-Church ..	88	6
Babbacombe ..	78	1
Chelston	31	0
Totals ..	592	23

Death from Zymotic Diseases.

The zymotic death-rate is calculated from the seven principal zymotic diseases. The following table enumerates them and the number of deaths recorded from each :—

Small-pox	... ...	0
Measles	... ...	1
Whooping Cough	... ...	0
Scarlet Fever	... ...	0
Diphtheria	... ...	2
Fevers — Typhus	... ...	0
Fevers — Enteric	... ...	0
Fevers — Continued	... ...	0
Diarrhœa	... ...	1
		4

The zymotic death-rate is therefore equal to ·12 per 1,000 against ·35 per 1,000 in 1921.

Birth Rate.

The total number of births was 490—males 251, females 239. Of these 34, or 7 %, were illegitimate.

	Males	Females	Illegitimate
First Quarter ...	59	62	10
Second Quarter ...	62	64	6
Third Quarter ...	70	59	7
Fourth Quarter ...	60	54	11
Totals ...	251	239	34

Ward Distribution.

	Males	Females	Illegitimate
Torre	28	19	2
Waldon	19	25	4
Upton	45	36	5
Ellacombe ...	54	54	8
Strand	26	28	3
Torwood... ...	14	9	2
St. Mary-Church ...	36	33	3
Babbacombe ...	20	25	3
Chelston ..	9	10	4
Totals ...	251	239	34

The birth-rate for the Borough is equal to 14·5 per 1,000 per annum, against 15·7 in 1921. The average for the past five years was 14·7 per 1,000. The rate for England and Wales was 20·6, and that for the 155 smaller towns 20·5 per 1,000.

Infant Mortality.

The number of deaths of children under one year of age was 23. This means an infantile mortality rate of 47 per 1,000 births as compared with a rate of 81 per 1,000 births in the previous year.

The rate for England and Wales in 1922 was 77 per 1,000 births, and that for the 155 smaller towns 75.

The death rate of legitimate children alone was 38·4 per 1,000 legitimate births, and that of illegitimate children alone was 121·2 per 1,000 illegitimate births.

The following tables are of interest :—

Table A. *Showing the Births, Infantile Deaths, and Infantile Mortality for a series of seven years as compared with those of the country as a whole.*

Year	Total Births recorded.	Deaths of Infants under 1 year.	Infantile Mortality for the Borough.	Infantile Mortality for England and Wales.
1915	490	41	84	110
1916	459	43	94	90
1917	401	26	65	97
1918	412	31	75	97
1919	531	25	47	89
1920	643	34	51	80
1921	542	44	81	83
1922	490	23	47	77

Table B. *Showing the principal Causes of Deaths among Infants, 1915—1922.*

Causes	1922	1921	1920	1919	1918	1917	1916	1915
Measles	—	—	—	—	3	—	1	3
Whooping Cough ...	—	3	—	—	1	—	2	1
Diarrhœa	1	8	4	1	2	2	2	3
Tubercular Diseases...	—	1	—	—	—	2	—	1
Bronchitis	1	6	2	5	7	2	2	8
Pneumonia	2	4	2	1	3	4	5	6
Premature Birth } Congenital Defects }	14	13	16	10	6	8	18	10
Accidents	—	2	1	—	—	—	—	—
All other causes ...	5	7	9	8	9	8	13	9
Totals ...	23	44	34	25	31	26	43	41

It is very satisfactory to note that the infant mortality rate of 46·9 is the lowest ever reached in the Borough. This rate has been steadily falling all over the country of late years, and it is reasonable to suppose that this is due in no small measure to the united efforts of the Infant Welfare Clinics, Children's Care Committees, and health workers generally, all of whom are working so assiduously for the conservation of infant life.

In Torquay, too, we have a very efficient midwifery service provided under the auspices of the Q.V.J.N.I., and the St. Mary-Church District Nursing Association, and there is no doubt that the care and attention given by them during the lying-in period have been a valuable aid in reducing the number of infantile deaths.

Dr. Eustace Hill has calculated that, if the infant mortality rate of England and Wales during the five years 1891—95 had remained at the same level during the last five years, 225,000 more infants would have died. Could there be any greater tribute to the success of Maternity and Child Welfare work.

There are still too many deaths due to prematurity, accidents of parturition, and congenital defects, and it seems probable that more careful supervision of the expectant mother would do much to reduce this mortality.

The problem of the illegitimate child has always been a difficult one, but surely more might be done to reduce the appallingly high mortality rate among such children. That this wastage of child life is unnecessary and avoidable is certain—as witness the great discrepancy between the illegitimate and legitimate death rates.

Eighteen still births were notified during the year, but are not included in the above figures. The loss of potential lives is of course very much greater than this, but it cannot at present be accurately gauged owing to the absence of systematic notification of all miscarriages and still-births. A very large number of these are due directly or indirectly to venereal disease, and it is a matter for real regret that the proposal to open a centre for the free treatment of such diseases in the borough has had, for financial reasons, to be given up.

Full particulars, giving exact details as to cause of death, and the age stated in weeks and months under one year, are given in Table IV., page 39.

MATERNITY AND CHILD WELFARE.

The Devon County Council is the supervising authority under the Midwives Acts. There are seven Midwives registered as practising in the Borough. Any irregularities in the carrying out of the rules of the Central Midwives Board which come to our notice are reported to the County Medical Officer of Health.

Conservation of Infant Life.

In 1915 the Notification of Births Act became compulsory, *i.e.*, the parents or other persons mentioned in the Act are bound to give notice of the birth to the Medical Officer of Health of the district in which the child is born within 36 hours of the occurrence.

The early notification is only a means to an end. That is the learning of the home conditions and rendering all assistance to the mothers to rear their children in health.

The provisions of this Act require to be more widely known, as failure to notify is still not at all uncommon. Thirty-one births were not notified during 1922.

On receipt of the notification a circular letter is sent to the mother pointing out the benefits of the Welfare Centres, when and where they are held, and cordially inviting her on her recovery to make use of them.

About 10 days after the birth the Health Visitor calls and obtains such particulars as are necessary to enable her to judge as to whether the infant will be properly looked after. Where considered necessary, she gives helpful advice to the mother regarding the feeding and general management of her infant. The visits are repeated at increasing intervals until the child goes to school and comes under the supervision of the School Medical Department.

She also reports upon sanitary defects, investigates cases of still-births, and assists the Medical Officer in the work of the Infant Welfare Centres.

This is a most valuable work and withal a difficult one, which calls for much tact, a wide knowledge of working-class conditions, and great personal sympathy on the part of the worker for its efficient administration.

A booklet, entitled "To Wives and Mothers," is distributed gratis to all mothers, and gives much useful information on the care and management of infants and young children.

HEALTH VISITOR'S REPORT FOR 1922.

	No. of Cases Visited.	Re-Visits.	Total.
Infants under 1 year ...	456	1539	1995
Children, 1 to 5 years ...	535	1044	1579
Still-Births	17	—	17
Ante-natal Cases	62	37	99
Ophthalmia Neonatorum ...	4	4	8
Tuberculosis	3	25	28
Special Visits	51	—	51
Out when visited	381	—	381
Cases found to have removed	83	—	83
Insanitary Conditions reported to M.O.H.	17	—	—
Attendance at Infant Welfare Centres	96	—	—

Total Number of Visits and Re-Visits ... 4241

The great value of the work is self evident, and that the mothers really appreciate the Health Visitor's assistance is evident from the fact that only 15 families objected to her visits.

Provision of Milk to Necessitous Mothers and Infants.

Applications for a free supply of milk under the Milk (Mothers and Children) Order, 1919, are in all cases made direct to the Medical Officer of Health. Care is taken to supply only necessitous cases in which lack of a proper supply of milk is likely to prove prejudicial to health. The great majority of the cases were personally investigated by the Health Visitor. There is no doubt such assistance is of inestimable value in saving the lives of infants in times of stress.

During 1922, 38 families were helped in this way, and 2,568 pints of milk were provided at a total cost of £40 8s 7d.

Infant Welfare Centres.

The whole of this work is controlled by the Infant Welfare Sub-Committee of the Town Council, and the following three Centres have now been established :—

(1). Ellacombe Centre meets in the Primitive Methodist Hall, Market Street, on Fridays, from 2.30 to 4.30 p.m.

(2). Market Street Centre meets as above on Mondays from 2.30 to 4.30 p.m.

(3). St. Mary-Church and Babbacombe Centre meets in the Furrough Cross Congregational Hall on Thursdays from 2.30 to 4.30 p.m.

Each Centre is managed by a Committee of Voluntary Workers, which meets at regular intervals, and makes all arrangements for carrying on the work.

Tea is provided at the nominal charge of 1½d. per head, and the programmes include health talks, instruction in home nursing and the care of infants, and demonstrations of sewing, cutting out, etc.

The Assistant Medical Officer of Health attends each Centre, and is responsible for the medical arrangements. He is always assisted by either the Health Visitor, the Matron of the Q.V.J.N. Institution, or one of the St. Mary-Church District Nurses.

Some idea of the general scope of the work may be gathered from the following combined figures :—

	1921.	1922.
Number of Sessions (3 Centres) - -	143	144
Attendances, under 12 months - -	1523	1858
Do. of children, 1—5 years -	1504	2192
Total Attendances - - -	3027	4050
Number of New Cases included in above -	157	164
Ante-Natal Cases - - - -	10	11
Average Attendance of Children per Session	21	28
Voluntary Workers' Visits to Homes -	396	203

It will be seen that there has been a marked increase in the number of attendances—last year's figures being exceeded by more than 1,000.

The majority of the babies are seen by the Medical Officer at each visit, any defects are pointed out to the mother, and instructions given *re* diet and infant management in general. Emphasis is laid on the preventive nature of this work, and all cases requiring treatment for other than simple disorders—such as indiscretions of diet, etc.—are referred to private practitioners.

When investigating each birth, the Health Visitor makes a note of the cases which might reasonably be expected to attend a Welfare Centre, excluding cases living very far from a centre, mothers working away from home, mothers with special home ties, etc. During 1922 she marked 371, out of the 511 children born, "as being in a position to attend and likely to benefit," and of these "possible" attenders 142 (38·3 %) were actually brought to the Centres.

Ante-Natal Cases.—Only 11 expectant mothers attended for advice. The importance of ante-natal supervision does not yet seem to be fully realised, or greater advantage would be taken of the facilities provided for this work. Many of the risks to which the expectant mother is exposed can be minimised or avoided entirely by routine examination and treatment.

Summary of Nursing Arrangements.

Professional Nursing in the Home. (*a*) General.—Nurses of the Queen Victoria Nursing Association and St. Mary-Church District Nursing Association are available for this purpose, independently of the Local Authority. (*b*) For Infectious Diseases.—The Town Council utilises the services of the Q.V.J.N.A. for nursing cases of Ophthalmia Neonatorum and Measles when necessary, on the instructions of the Medical Officer of Health. A retaining fee of £10 per annum is paid and 1s. per visit.

Midwives.—The Council makes a subsidy to the Jubilee Nursing Association of $\frac{1}{4}$ the deficit of the cost of their midwives, less the amount obtained in fees. This is in addition to the grant received by them direct from the Ministry of Health. Similarly to the St. Mary-Church Nursing Association a subsidy is given of $\frac{3}{4}$ of the deficit between cost of midwife and fees obtained. The reason for this is that no grant is received direct by that Association from the Government.

A grant is also made to the Committee of the Door of Hope for Friendless Girls towards the expenses of running that Institution. The babies here are regularly seen by the Corporation Health Visitor.

Lying-in Accommodation.—There is no Institution in the Borough where mothers of the working classes can be received for ordinary confinement. The authorities of the Torbay Hospital will, however, always receive cases of complication. In these days, when it is necessary to avoid capital expenditure, it is useless to make suggestions for providing such accommodation.

Puerperal Fever.

Only one case was notified, and fortunately was comparatively mild.

Ophthalmia Neonatorum.

One case was notified, and three other cases were discovered later by the Health Visitor. As a routine all these are at once visited by the Health Visitor, who obtains particulars of the

cases ; she also re-visits to ascertain the ultimate result of the case. The Council have an arrangement with the Queen Victoria Jubilee Nursing Association to treat all the cases in which the Medical Attendant considers it desirable.

These cases were all successfully treated at home, and in none of them was the sight impaired.

Ophthalmia Neonatorum	Cases			Vision un-impaired	Vision impaired	Total blindness	Death
	Notified	Treated					
		At Home	In Hospital				
	1	1	—	1	—	—	—

Non-Notifiable Infectious Diseases..

Small isolated outbreaks of measles interfered somewhat with the attendance in certain of the infants' schools, and resulted in one death. There was a marked absence of other non-notifiable infectious diseases.

Infantile Diarrhœa.

Comparatively few cases seem to have occurred during the summer, and only two deaths were recorded, both being children under one year of age.

Diseases and Accidents of Parturition.

Three deaths were attributed to this cause as compared with four last year.

Notifiable Diseases during the Year 1922.

Disease		Total Cases Notified	Cases Admitted to Hospital	Total Deaths
Diphtheria		36	24	3
Scarlet Fever		51	44	0
Enteric Fever (including para-Typhoid)		1	1	0
Puerperal Fever		1	0	0
Pneumonia		12	0	25
Tuberculosis—				
(*a*) Pulmonary	M.	46	39	28
	F.	41	13	24
	Totals	87	52	52
(*b*) Non-Pulmonary	M.	6	0	5
	F.	5	0	3
	Totals ..	11	0	8

HOSPITALS & OTHER INSTITUTIONS AVAILABLE FOR THE DISTRICT.

Hospitals provided or subsidised by the Local Authority or by the Devon County Council.—(1) Tuberculosis, "Whitecliffe." This is the old Western Hospital, taken over by the County Council. It accommodates 45 patients. (2) There is no special Maternity Hospital, but the Authorities of the Torbay Hospital will admit urgent cases requiring operative treatment. (3) Rosehill Children's Hospital. The Maternity and Child Welfare Committee subsidise one bed, and if vacant can obtain the use of a second, at a cost of one guinea per week. This Hospital is situated on the Lower Warberry Road, and accommodates 30 patients.

The Borough Sanatorium, Newton Abbot Road, consists of the Administrative Building—Scarlet Fever ward block, consisting of two wards, with four beds in each; and a Diphtheria ward block, two wards with four beds in each. There is also a private ward for one patient, with Nurse's room attached.

The financial statement for the year April 1st, 1921, to March 31st, 1922, shows that the cost amounted to £1,667 5s. 2d., of which sum about £300 was for redecorations, furniture renewals, and installation of hot water apparatus. The number of patients treated in the same period was 48. These consisted of 21 cases of Diphtheria and 27 of Scarlet Fever.

Enteric Fever.

When there is accommodation, the Authorities of the Torbay Hospital admit cases of this disease.

Cockington Sanatorium.

Taken over from the Cockington Urban District at the time of the amalgamation. This hospital is considerably more than half-a-mile from any inhabited building, and is kept in readiness for the reception of small-pox, should any arise.

The cost of the Cockington Sanatorium, which was empty during the year, was £114, consisting of rent, rates, etc.

Bacteriological Examination.

Specimens from suspected cases are examined at the expense of the Town Council by Mr. Quant, of the South Devon Chemical and Bacteriological Laboratory, who reports that during the year he examined the following :—

Diphtheria	126	Positive	26
		Negative	100
Tubercular Sputum	56 examinations	Positive	11
		Negative	45
Total	182		

In the Laboratory attached to the Health Department we have examined 193 specimens from inflamed or suspicious throats of children attending the elementary schools. Some 21 specimens for other pathological conditions were examined.

Ambulance Facilities.

There are two motor ambulances belonging to the Corporation and under the supervision of the Medical Officer of Health—(1) A covered Ford Ambulance, and (2) a Daimler Ambulance. The former has been utilised for the removal of infectious cases, and the latter for medical and surgical. The ambulances are garaged at the Town Hall, and during office hours can be obtained by communicating with the Medical Officer of Health at his office, Telephone No. 1010. When the offices are closed application should be made to the ambulance driver at his house, Telephone No. 504.

Two trained members of the St. John Ambulance Brigade always accompany the ambulance as attendants.

Local and Adoptive Acts in Force in the Area.

Practically all the Adoptive Acts and Regulations have been put in force by the Council, and where necessary bye-laws framed.

Small-pox and Vaccination.

No cases were notified. No vaccinations, either primary or re-vaccinations, were performed by the Medical Officer of Health. The accompanying table indicates the position of the district as regards vaccination.

Through the courtesy of Mr. Edwards, the Vaccination Officer, I am able to give the average results of primary vaccination for the years from 1900 to 1919 :—

Years.	Total births registered	Successfully vaccinated	Insusceptible of Vaccination	Had Small-pox	Number of Certificates from Conscientious Objectors	Died Unvaccinated	Postponed by Medical Certificate	Removed to other districts the Vaccination Officer which has been apprised	Removed Address unknown	Percentage successfull. Vaccinated	Excluding those who died Unvaccinated. Percentage
10 Years' Average 1900—1909	578	468	1	—	39	4	6	3	10	82	87
10 Years' Average 1910—1919	522	219	1	—	235	33	9	3	15	41	44
1920	686	271	2	—	340	35	11	2	20	40	41
1921	561	179	3	—	314	34	6	6	10	32	34

From the above it will be seen that about 49 per cent. of children born are unprotected by vaccination. A very precarious position for such a town as Torquay to be in, should small-pox be introduced.

During 1922, in consequence of the outbreak of small-pox in London, the Midlands, and the North of England, many individuals have made enquiries at this office as to facilities for being vaccinated. These have been referred to the Public Vaccinators, and I believe a considerable number of adult vaccination has been done.

As stated on page 18, the Cockington Isolation Hospital is kept in readiness for the reception of small-pox cases.

Enteric Fever.

The only case notified was a patient removed from Dartmouth to the Torbay Hospital for treatment.

Scarlet Fever.

Fifty-one cases of scarlet fever were notified. Cases of a mild character occurred in every month of the year except May and June, and in every Ward of the Borough except Chelston. The disease did not at any time assume epidemic proportions. Of the 51 cases notified 44, or 86%, were removed to the Isolation Hospital for treatment. There were no deaths.

Diphtheria.

Thirty-six cases were notified, of which 12 occurred in January. Twenty-four, or 67%, were removed for treatment. Three cases proved fatal, and in each instance the patients were treated at home. The first, a child of 2½, living in Babbacombe; the second, a child of six, living at Ellacombe; here the disease was not at first recognised, and death occurred on the same day as the bacteriological examination was made. The last fatal case was rather unusual—the patient, a woman aged 69, living in Upton. No doctor was called in until about the sixth day; the patient gradually succumbed to heart failure. It is in my experience rare to find a person of this age infected with Diphtheria. The death-rate is equal to ·08 per 1,000.

It is our routine practice to take swabs from all children contacts before they are allowed to return to school, and prophylactic injections of antitoxin are offered and in many cases carried out. Free supplies of antitoxin can be obtained from Messrs. Cocks and Dunsford, Castle Circus; Mr. Quant, Torwood Street, and from Mr. Cutmore, Fore Street, St. Mary-Church.

Tuberculosis.

During the year 87 notifications of Pulmonary Tuberculosis were received, and 11 for other forms of Tuberculosis.

Fifty-two deaths were registered from Pulmonary Tuberculosis among Torquay residents, besides which there were 16 deaths among visitors, whose deaths were transferred to other sanitary areas.

The death-rate is equal to 1·4 per 1,000 per annum.

The following table gives the sex and age at death :—

Age period		1—5	5—15	15—25	25—45	45—65	over 65	Totals.
Residents	Males	1	—	2	12	[illegible]	2	28
	Females	—	—	6	10	7	1	24
Totals		1	—	8	22	18	3	52

Besides the above there were eight deaths from other forms of Tubercular disease.

Notifications of this disease are forwarded weekly to the Devon County Council, and there is close co-operation between the County Tuberculosis Officer and myself in dealing with Tubercular cases.

Free disinfection of rooms and bedding is carried out after death or removal of patients from houses in the Borough.

The Devon County Council utilise "Whitecliffe" as a hospital for the reception of cases of tuberculosis which are not suitable for treatment at the County Sanatorium. Many of the transferable deaths occur in this Institution.

Cancer, Malignant Disease.

There were 60 deaths registered from the above cause, four more than in 1921. The age and sex distribution is as follows :—

Age period	under 30	30—35	35—45	45—55	55—65	65—75	over 75	Totals
Males	—	—	1	5	5	13	2	26
Females	—	—	3	1	13	7	10	34
Totals	—	—	4	6	18	20	12	60

The death-rate from cancer is equal to 1·7 per 1,000 per num.

It must be remembered that the character of the population, which contains a larger porportion of persons of advanced years and of females over males than the country as a whole, has a great bearing on the mortality from this disease.

Venereal Disease.

The treatment of this disease is supervised by the County Council. Although that Authority gives every facility for patients to attend the centres at Exeter, even to advancing the cost of railway fare in necessitous cases, yet the want of a local centre militates against successful action in combating this complaint.

WATER SUPPLY.

The town supply is derived from upland surface gathering ground on the borders of Dartmoor, about 15 miles from Torquay. The area of the gathering ground is 2,241 acres, and belongs to the Corporation. All inhabited houses and farms have been cleared from the area, thus preventing any menace to the purity of the water. The water is also, as a further precaution, passed through mechanical filters. In this way all suspended material is removed; it is clarified, and the appearance considerably improved.

The total amount supplied was 610,000,000 gallons, or 27·8 gallons per head for a population of 58,369. This includes Newton Abbot and a few villages on the line of the mains.

The total rainfall on the catchment area during the year was 45·95 inches.

Quality of the Water.

It possesses all the qualities of a good upland surface water. The watershed has been so protected as to make the possibility of pollution infinitesimal. It is also subjected to mechanical filtration, rendering it doubly safe, and removing any suspended peaty matter. It is extremely soft, yet contains sufficient lime and magnesia salts to prevent any solvent action on lead. It is in all respects one of the best domestic supplies in the Kingdom.

Regular monthly analyses of the water are made, samples being taken from different areas in the Borough. The results vary very slightly; the following is a typical result:—

Results of Chemical Analysis.

Physical Characters—Very pale straw colour, clear, no odour or deposit.

Chemical Constituents	Expressed in parts per 100,000
Total Solids	7·0
Chlorides	1·6
Hardness	1·5
Nitrites	nil
Nitrates	·13
Free Ammonia	trace
Organic Ammonia	·007
Oxygen absorbed in 4 hours	·083

SEWERAGE.

The sewage of the whole district, and most of the storm-water, is conveyed to the main sewer in Fleet Street; that of the Strand, Torbay Road, Vaughan Parade, Victoria Parade, Beacon Hill, George Street, and Swan Street, being pumped into the main sewer. The main sewer is seven feet in diameter, and runs from Fleet Street to Hope's Nose, a distance of about two miles. The outfall is at such a level that the sewage is discharged at all states of the tide. No method of treatment is adopted, as the flow of current is out towards mid-channel beyond Berry Head, and does not under any circumstances return towards the bay.

Drainage of Houses.

Most of the houses, especially villa residences and large boarding houses, have the best modern sanitary arrangements, including water closets of good type with waste water preventers. In every case where possible the drains are connected with the sewers, except where the levels prevent, necessitating the provision of cesspools. This evil has during the year become intensified owing to the erection in unsewered areas of bungalows. I feel certain that it will give rise in the future to serious trouble.

Collection and Disposal of House Refuse.

House refuse is moved by the employees of the Corporation under the Surveyor's Department. In most parts of the town it is removed once a week, but in certain parts twice. It is carted to the destructor works in Upton Valley, and there consumed, 11,462 tons being dealt with annually. The destructor is a "Warner Perfectus" of six cells The boilers are heated from the furnaces, and the steam generated can be used to drive donkey engine, vertical engine for running blower, 25-horse-power engine for running mortar mill and electrical installation. The clinker produced is ground and used for mortar.

The provision of suitable ashbin accommodation is a matter which still gives us considerable trouble. To meet this a clause has been inserted in a Bill now being promoted in Parliament, which gives power to enforce the provision and maintenance of suitable sanitary ashbins.

The Staff.

The Medical Officer of Health is responsible to the Sanitary Committee for the proper working of the department. He is also the Administrative School Medical Officer, in which capacity he is responsible for the medical inspection and treatment of elementary school children to the Education Authority, thus co-ordinating the two offices.

For the efficient carrying out of these duties he has the assistance of the following:—

An Assistant and Deputy Medical Officer of Health, whose principal duties are the medical inspection and treatment of school children. In this connection may be included the *School Nurse.* The Deputy Medical Officer of Health also carries out the duties of Medical Officer to the Infant Welfare Centres, where he is assisted by the lady *Health Visitor*, who possesses the C.M.B. Certificate.

The Staff of the Sanitary Department is as follows:—

Mr. C. MacMahon, Cert. San. Inst., Senior Inspector.

Mr. G. Body, Cert. San. Inst., Meat and Food Inspector, Port Sanitary Officer, and Meteorological Observer.

Mr. Loveless, Cert. San. Inst.

Mr. N. Tucker, Cert. San. Inst.

Inspection of Food and Places where it is Prepared.

The supervision of slaughter-houses, butchers' shops, Market Hall and Fish Quay, has been well maintained during the year, the number of visits to these places being quite up to the standard.

The Report of the Departmental Committee on Meat Inspection, issued last year, proved to be a most valuable enquiry into the methods of slaughtering and distribution of meat. The conclusions arrived at on the inspection of meat is the first real attempt to co-ordinate the methods of inspection throughout the country. Until now the principles governing the condemnation of diseased carcases or organs varied with the technical knowledge of the Inspector, his experience, and the advice of the Medical Officer of Health, but under the schedule of inspection laid down in the report a considerable degree of uniformity should be possible for every progressive Authority.

So far as this Borough is concerned we have, ever since systematic inspection of meat was inaugurated, practically followed the suggestions set out in the Committee's Report. We have also endeavoured in all cases of doubt to verify our diagnosis by microscopical examination.

Many difficulties associated with meat inspection have long been apparent to our Sanitary Committee, and advantage has been taken of the promotion of a Parliamentary Bill by the Corporation to insert certain clauses dealing with this important subject, and which also have the commendation of the Departmental Committee. At the time of writing, this Bill has passed the second reading, and it is hoped will pass through the Committee stage without much amendment. They will greatly strengthen our powers, and undoubtedly improve the conditions under which food is prepared. Among the principal points are the following :—

Power to establish a public abattoir ; to close insanitary slaughter-houses ; to make regulations governing the preparation of sausages, ice-cream, and other articles of food ; the prohibition of inflating of carcases by the mouth ; preventing rag and bone hawkers dealing in articles of food ; the use of sleeping rooms for storage of food ; preventing persons in advanced stages of tuberculosis from the

handling, dealing, or preparation of food for human consumption; persons dealing in shell fish to furnish source of supply; to amend the law so that the original vendor of unsound food shall be held liable, and thus bring the Public Health Act into line with Public Health (London) Act, 1891; to authorise the making of bye-laws to prevent meat (other than foreign) being offered for sale until after inspection by an officer of the Corporation; to require notice of the slaughter of any animal suffering from accidental injury or illness, and to authorise the inspection in any slaughter-house within a radius of six miles of the Borough of any carcase or part thereof intended for sale in the Borough; and to make regulations respecting the conveyance of meat through the streets.

The provision of a public abattoir is an essential of modern requirements. It would enable the private slaughter-houses to be done away with, and as these are situated on the outskirts of the town, would save a considerable amount of time and greatly facilitate meat inspection. It would also ensure the preparation and cooling of carcases under satisfactory conditions.

Slaughter-Houses.

These number five, four being subject to annual licensing, and the so-called public slaughter-house is registered. This is one less than in 1921, as during the year one came into the market and was purchased by the Corporation.

The premises are visited almost daily, and on the whole are kept in a satisfactory condition, the quarterly lime-washing and the periodic cleansing of the slaughtering cradles giving most trouble.

The lack of cooling accommodation, necessitating the slaughter of animals in close proximity to those hanging up, is a great drawback and a strong argument in favour of the provision of a public abattoir. Other points are the keeping of pigs and storage of pig-wash in close proximity to the slaughter-house.

Regular visits of inspection are made to all butchers' shops, market, railway siding, and fish quay.

The following table summarises the amount of unsound food destroyed :

Seized - - -	— tons	1 cwt.	— qrs. — lbs.
Voluntarily Surrendered -	502 ,,	17 ,,	1 ,, $15\frac{3}{4}$,,
Surrendered after Inspection	1 ,,	16 ,,	1 ,, $22\frac{1}{4}$,,
Total -	504 tons	14 cwt.	3 qrs. 10 lbs.

Disinfection.

Free disinfection is carried out in all cases of notifiable infectious disease, and also after removal or death of consumptive patients. Rooms are first fumigated with formaline, and then the bedding is removed to the disinfecting station at the Isolation Hospital and subjected to steam sterilisation. The disinfector is a "Thresh" Current Steam Disinfector.

Dairies, Cowsheds, and Milk Shops.

Registered dairymen and cowkeepers in the Borough number 78. Their premises are visited twice a year to see that the necessary lime-washing has been done. On the whole we have not to complain much in this respect. Occasional visits are also made to see how the regulations are carried out. The proper grooming of the cows and the washing of the milker's hands are matters which many cowkeepers think of little account. Since the beginning of 1923 two conferences of those interested in the dairy business have been held, with a view to encouraging producers to supply "Grade A" milk. They were held, one at Seale-Hayne College and later, one in Torquay, and were due to the initiative of Col. Edwardes-Ker, the Principal of Seale-Hayne College. They were well attended. and I believe all were impressed with the necessity of producing clean milk, and that it can be accomplished at a small initial cost. I am also in hopes that the bogey, that the grooming of the cows and washing udders and teats will give the animals chill and reduce the quantity of milk, has received its quietus. Further results of the conferences have been the formation of an influential Committee to create a demand for Grade A milk, and to accomplish this I believe there ought to be no difficulty in a town like Torquay. Col. Edwardes-Ker has personally conducted a number of interested persons to Reading, where they have investigated the production and distribution of this class of milk, and many have returned imbued with the determination to at once adopt similar methods. There is little doubt that if one individual makes a start others will quickly follow.

Most dairymen in the Borough obtain supplies from farms outside, and these we inspect each year, obtaining particulars of the conditions of the cowsheds as regards cleanliness, lighting, ventilation and paving, cleaning of milk vessels, the purity of the water supply, and the number and condition of cows in milk.

After these inspections, a complete register is compiled of all dairies and cowsheds in the Borough, together with the farms outside which supply them with milk, etc. The register is printed in the form of a bill, and is posted up throughout the town, copies being forwarded to all dairymen and farmers concerned. Such bills are a guarantee that we are satisfied with the sanitary state of the places at the time of inspection. We also know the source of each dairyman's milk supply, which is of great value in tracing possible sources of infection. From my knowledge of the farms, etc., I am in a position to advise residents who enquire concerning a milk supply, and it is surprising the number of such that are made. So that it is to the benefit of individual dairymen to be satisfied as to the condition of the farms from which he derives his milk.

Milk and Cream Regulations, 1912-1917. These regulations are enforced by the County Police.

Sale of Food and Drugs Act.

Samples are taken by the County Police. Through the courtesy of Superintendent Crooke, I am enabled to give the following results :—Seven samples of butter and cream were taken, and on analysis were found genuine. Forty-eight samples of milk were analysed, and six were reported not genuine. Prosecutions were instituted in each case, and fines varying from 10s. 6d. to £15 were inflicted.

SANITARY INSPECTIONS OF THE DISTRICTS.

Summary of Sanitary Inspector's Work.

Houses inspected - - - -	190
Houses visited - - - -	676
Dirty premises limewashed and cleaned - -	118
Rooms disinfected - - - -	128
Cases of overcrowding abated - - -	2

Defective floors repaired	44
Water supply laid direct from main to tap over sink	30
Defective yards re-paved	44
Lighted and ventilated rooms	17
R.W.P.'s and gutters repaired	26
Nuisances from keeping fowls and animals	28
Ashbins provided for house refuse	58
Roofs repaired	35
Smoke tests applied	421
Water ,, ,,	123
New sets of house drains laid	69
Defective house drains repaired	57
Intercepting traps with fresh-air inlets fixed	67
Old "Mason's" and other old type of traps abolished	43
Inspection chamber to drains built	124
Drains ventilated at head of system	45
New sanitary conveniences with water supply fixed	97
Soil pipes fixed outside buildings and ventilated	25
Iron and brick traps removed and earthenware gullies fixed	119
Waste pipes from baths, lavatories and sinks trapped	52
Choked drains cleared	51
Defective w.c. cisterns repaired or new provided	68
W.C.'s repaired and cleansed	17
Glazed sinks fixed	38
Handrails fixed	4
Offensive accumulations removed	50
Nuisances from stables and manure pits abated	21
Miscellaneous repairs	70
Re-visits in connection with above work	1168
Legal notices	22
Preliminary notices served	49
Letters and communications in connection with the work of the department	884
Verbal notices	89
Written complaints	98
Verbal complaints	100
Slaughter-houses visited	812
Butchers' shops ,,	1130
Butchers' carts ,,	78
Fish Quay ,,	80
Railway siding ,,	57
Market ,,	52
Other shops ,,	228
Carcases inspected	9916
Weight of food destroyed	*1,130,622 lbs.
Number of vessels inspected	30
Houses closed as unfit for human habitation	4
Workshops visited	265
Workshop notices	15
Houses repaired	193
Sanitary certificates granted	32
Visits to piggeries	27
,, stables	37
,, dairies and cowsheds	127
Disinfectants supplied	1500
Public Elementary Schools—visits	135

* Note—Includes 500 tons of diseased potatoes.

Common Lodging Houses.

There are now only two common lodging houses in the district. Both premises are regularly inspected, 40 visits being paid.

Marine Stores.

There are about a dozen of these businesses (large and small) carried on in the Borough. Most of them collect rags, bones, and rabbit skins. As they have now been included among offensive trades, they are subject to bye-laws governing them.

Schools.

Matters pertaining to these are dealt with in the Report to the Education Authority. The Sanitary Inspectors make monthly inspections of the conveniences attached to the schools; any defects found are reported to the Sanitary Committee.

The School Annual Report deals with the Medical Inspection of the children.

Factory and Workshops.

During the year the routine inspection of workshops was carried out, and 338 were visited. Twenty-five notices were sent to abate nuisances or remedy defects.

Among the above are included 38 bakehouses, of which five are registered as underground bakehouses. They are regularly inspected, and are usually found in a cleanly condition.

Port Sanitary Work.

As far as possible all vessels are boarded and inspected on arrival, special attention being paid to those from Foreign Ports.

During the year 30 vessels of various classes have been inspected—8 Foreign Sailing, 6 Coastwise Sailing, 13 being Coastwise Steamers, and 3 Foreign. As a number of vessels trade here at regular intervals, it is only necessary to examine them periodically.

On the whole all the vessels inspected have been found in a satisfactory condition; most defects were of a minor nature, being at once attended to when brought to the notice of the Master.

No cases of illness have been reported during the year, and no trouble with rats has been experienced.

HOUSING.

The total number of houses which have been completed and passed for habitation during the year was 36.

The forty houses for which sanction was obtained from the Minister of Health, and mentioned in last year's report, are now, at the time of writing, practically completed but not yet occupied. For these houses there have been applications four and five times over, emphasising the necessity for provision of further housing accommodation. To meet this private enterprise cannot be relied on. Such houses as are erected by builders are only for sale, which precludes them for those who require them most.

Pimlico Insanitary Area.—Progress regarding this area has been slow. Towards the end of the year your officers had an interview with officials at the Ministry of Health, and subsequently presented a report. The Council then decided that the Housing Committee should take steps to provide the houses required to accommodate the dispossessed. This is now under consideration, which, when completed, a full scheme for dealing with the area will be formulated and presented to the Ministry for their sanction. I trust before another year passes this area, which has been a blot on the sanitary condition of the town, will have been swept away.

I. Unfit Dwelling Houses.

Inspection—

(1)	Total number of dwelling houses inspected for housing defects (under Public Health or Housing Acts) ...	211
(2)	Number of dwelling houses which were inspected and recorded under the Housing (Inspection of District) Regulations, 1910	44
(3)	Number of dwelling houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation	4
(4)	Number of dwelling houses (exclusive of those referred to under the preceding sub-heading) found not to be in all respects reasonably fit for human habitation ...	0

Inspections of houses is still attended with difficulties. Some houses are in such a bad structural state that repair is almost impossible, and all that one can do is to obtain a Closing Order, but this is of little use to the tenants, as there are no

suitable houses for them to remove to. In some cases personal appeals to owners have resulted in temporary repairs so as to render occupation possible.

Every effort is made to get repairs carried out, and notwithstanding the difficulties, a considerable amount of satisfactory work has been accomplished.

In my last year's report I pointed out difficulties which arose in effecting repairs to minor defects, which in themselves could not be considered nuisances under the Public Health Acts, but the cumulative effect of which rendered the houses not in all respects fit for human habitation. Among these are broken stoves and grates, broken sash cords to windows, no rails to stairs, doors off hinges, internal plaster defective, etc. During the year the Town Council have been considering various matters, with a view to promoting a Private Bill, and the Sanitary Committee have inserted a clause, which if accepted will have the effect of including these in the definition of nuisances capable of being dealt with under Section 91 of the Public Health Act, 1875. This would go far towards bettering the condition of the houses of the working classes.

II. Remedy of Defects without Service of Formal Notice.

Number of defective dwelling houses rendered fit in consequence of informal action by the Local Authority or their officers	172

III. Action under Statutory Powers.

a. Proceedings under Section 28 of the Housing, Town Planning, &c., Act, 1919 :—	
(1) Number of dwelling houses in respect of which notices were served requiring repairs	10
(2) Number of dwelling houses which were rendered fit—	
(*a*) by owners	10
(*b*) by Local Authority in default of owner ...	0
(3) Number of dwelling houses in respect of which closing orders became operative in pursuance of declarations of owners of intention to close	1
b. Proceedings under Public Health Acts :—	
(1) Number of dwelling houses in respect of which notices were served requiring defects to be remedied ...	10
(2) Number of dwelling houses in which defects were remedied—	
(*a*) by owners	10
(*b*) by Local Authority in default of owner ...	0

c. Proceedings under Sections 17 and 18 of the Housing, Town Planning, &c., Act, 1909 :—

(1)	Number of representations made with a view to the making of Closing Orders	3
(2)	Number of dwelling houses in respect of which Closing Orders were made	3
(3)	Number of dwelling houses in respect of which Closing Orders were determined, the dwelling houses having been rendered fit	—
(4)	Number of dwelling houses in respect of which Demolition Orders were made	—
(5)	Number of dwelling houses demolished in pursuance of Demolition Orders	—

TABLE I.

VITAL STATISTICS OF WHOLE DISTRICT DURING 1922 AND PREVIOUS YEARS.

Year.	Population estimated to Middle of each Year.	Births.			Total Deaths Registered in the District.		Transferable Deaths.		Nett Deaths belonging to the District.			
		Uncorrected Number.	Nett.						Under 1 year of age		At all ages.	
			Number	Rate.	Number.	Rate.	of Non-Residents registered in the District.	of Residents not registered in the District.	Number.	Rate per 1,000 Nett Births	Number.	Rate.
1	2	3	4	5	6	7	8	9	10	11	12	13
1912	39000	560	571	14·6	485	12·4	58	52	52	91	479	12·2
1913	39250	530	535	13·6	495	12·6	45	71	58	108	521	13·2
1914	39440	533	542	13·1	482	12·2	44	54	45	83	492	2·4
1915	32520	482	490	12·4	543	16·6	59	92	41	83·6	576	17·7
1916	31540	449	459	13·3	554	17·2	65	53	43	93·7	542	17·2
1917	30685	389	401	11·7	562	18·3	88	80		64·8	554	18·0
1918	30710	407	412	12·0	597	19·4	85	110	31	75	622	20·2
1919	33374	517	531	15·2	501	15·0	60	63	25	47	501	15·1
1920	34703	643	657	18·6	505	14·5	57	62	34	53	510	14·7
1921	33600	533	542	16 1	529	15·7	73	69	44	81	533	15·8
1922	33690	495	490	14·5	581	17·2	66	77	23	47	592	17·5

Table II.

Cases Notified During the Year 1922.

Notifiable Disease.	Number of Cases notified.								Total cases notified in each locality.									Total cases removed to hospital.
	At all ages.	At Ages—Years.							Torre	Waldon	Upton	Ellac'mbe	Strand	Torwood	St. M'C'h.	Babbac'be	Chelston	
		Under 1	1 to 5	5 to 15	15 to 25	25 to 45	45 to 65	65 and upwards										
Small-pox ..	—	—	—	—	—	—	—	—	-	-	-	-	-	-	-	-	-	—
Cholera ..	—	—	—	—	—	—	—	—	-	-	-	-	-	-	-	-	-	—
Diphtheria,incl'd'g Membranous croup	36	—	5	24	4	2	—	1	9	-	2	8	2	3	5	4	3	24
Erysipelas ..	1	—	—	—	—	—	1	—	-	-	-	1	-	-	-	-	-	—
Scarlet fever ..	51	—	3	35	9	3	—	1	9	2	9	10	2	3	9	7	-	44
Enteric fever ..	1	—	—	—	—	1	—	—	-	-	1	-	-	-	-	-	-	1
Typhus fever ..	—	—	—	—	—	—	—	—	-	-	-	-	-	-	-	-	-	—
Relapsing fever ..	—	—	—	—	—	—	—	—	-	-	-	-	-	-	-	-	-	—
Continued fever ..	—	—	—	—	—	—	—	—	-	-	-	-	-	-	-	-	-	—
Puerperal fever ..	1	—	—	—	—	1	—	—	-	-	-	-	-	-	-	1	-	—
Cerebro-spinal Meningitis ..	—	—	—	—	—	—	—	—	-	-	-	-	-	-	-	-	-	—
Poliomyelitis ..	—	—	—	—	—	—	—	—	-	-	-	-	-	-	-	-	-	—
Opthalmia Neonatorum	1	1	—	—	—	—	—	—	-	-	-	1	-	-	-	-	-	—
Encephalitis Lethargica ..	—	—	—	—	—	—	—	—	-	-	-	-	-	-	-	-	-	—
Pulmonary Tuberculosis ..	87	—	1	3	15	44	22	2	18	12	10	12	3	7	11	8	6	—
Other forms of Tuberculosis ..	11	—	2	1	4	4	—	—	-	3	1	1	2	2	1	1	-	—
Pneumonia ..	12	—	1	2	4	5	—	—	-	1	3	4	2	1	-	1	-	—
Malaria ..	—	—	—	—	—	—	—	—	-	-	-	-	-	-	-	-	-	—
Totals ..	201	1	12	65	36	60	23	4	36	18	26	37	11	16	26	22	9	69

TABLE III. CAUSES OF, AND AGES AT DEATH DURING THE YEAR 1922. (see Notes next page).

CAUSES OF DEATH.	Net deaths at the subjoined ages of Residents whether occurring within or without the District (*a*).									Total Deaths whether of Residents or non Residents in Institutions in the District
	All ages	under 1	1 and under 2	2 and under 5	5 and under 15.	15 & under 25.	25 & under 45.	45 & under 65.	65 & upwards	
All causes (Certified (*c*)	581		4	9	11	20	65	140	310	51
All causes (Uncertified	11	1	—	—	—	—	—	3	7	—
Enteric Fever ..	—	—	—	—	—	—	—	—	—	—
Small-pox	—	—	—	—	—	—	—	—	—	—
Measles	1	—	1	—	—	—	—	—	—	—
Scarlet Fever ..	—	—	—	—	—	—	—	—	—	—
Whooping-cough ..	—	—	—	—	—	—	—	—	—	—
Diphtheria ..	3	—	—	1	1	—	—	—	1	—
Influenza	19	—	—	—	2	—	1	4	12	—
Encephalitis Lethargica ..	—	—	—	—	—	—	—	—	—	—
Meningococcal Meningitis ..	—	—	—	—	—	—	—	—	—	—
Tuberculosis of Respiratory System	52	—	—	1	—	8	22	17	4	14
Other tuberculous diseases	8	—	—	—	1	1	4	1	1	—
Cancer, malignant disease ..	60	—	—	—	—	—	4	24	32	6
Rheumatic Fever ..	1	—	—	—	—	—	—	—	1	—
Diabetes	2	—	—	—	—	—	—	—	2	—
Cerebral Hæmorrhage ..	46	—	—	—	—	—	3	10	33	2
Heart Disease ..	84	—	—	—	—	1	7	24	52	2
Arterie-Sclerosis ..	47	—	—	—	—	—	—	4	43	—
Bronchitis ..	52	1	2	2	—	—	2	8	37	—
Pneumonia (all forms)	25	2	—	1	—	6	6	6	4	3
Other Respiratory Diseases ..	11	—	—	—	—	—	2	3	6	1
Ulcer of Stomach or Duodenum ..	1	—	—	—	—	—	1	—	—	—
Diarrhœa, etc. (under 2 years) ..	1	1	—	—	—	—	—	—	—	—
Appendicitis and Typhlitis ..	3	—	—	—	—	1	—	1	1	4
Cirrhosis of liver ..	2	—	—	—	—	—	—	2	—	—
Acute and Chronic Nephritis ..	21	—	—	—	—	—	1	11	9	3
Puerperal Sepsis ..	—	—	—	—	—	—	—	—	—	—
Other accidents and diseases of Pregnancy and Parturition	3	—	—	—	—	—	3	—	—	1
Congenital Debility and Malformation, Premature Birth ..	16	14	1	1	—	—	—	—	—	1
Suicide	3	—	—	—	—	—	2	1	—	—
Other Deaths from Violence ..	11	—	—	1	2	—	—	5	3	4
Other Defined Diseases	116	5	—	2	5	3	7	20	74	9
Causes ill-defined or unknown ..	4	—	—	—	—	—	—	2	2	1
	592	23	4	9	11	20	65	143	317	51

NOTES TO TABLE III.

The classification and numbering of Causes of Death are those of the "Short List" on page XXV. of the Manual of the International List of Causes of Death.

(*a*) All "transferable deaths" of residents, *i.e.*, of persons resident in the district who have died outside it, are *included* with the other deaths in columns 2-10. Transferable deaths of non-residents, *i.e.*, of persons resident elsewhere in England and Wales who have died in the district, are in like manner *excluded* from these columns.

The total deaths in column 2 of Table III. should equal the figures for the year in column 12 of Table I.

(*b*) All deaths occurring in institutions for the sick and infirm situated in the district, whether of residents or non-residents, are to be entered in the last column of Table III.

(*c*) All deaths certified by registered medical practitioners, and all inquest cases, are to be classed as "Certified:" all other deaths are to be regarded as "Uncertified."

(*d*) Exclusive of "Tuberculous Meningitis" (10), but inclusive of Cerebro Spinal Meningitis.

(*e*) Title 19 should be used for deaths from Diarrhœa and Enteritis at all ages. (In the "Short List" deaths from Diarrhœa and Enteritis under 2 years are included under Title 19; those at 2 years and over being placed under Title 28).

Table IV.

Infant Mortality during the Year 1922.

Nett Deaths from stated Causes at Various Ages under One Year of Age.

CAUSES OF DEATH.	Under 1 Week.	1—2 Weeks.	2—3 Weeks.	3—4 Weeks.	Total under 1 Month.	1—3 Months.	3—6 Months.	6—9 Months.	9—12 Months.	Total Deaths under One Year.
All Causes. Certified ..	7	5	1	1	14	2	2	3	1	22
All Causes. Uncertified ..	-	-	-	-	-	-	-	1	-	1
Small-pox	-	-	-	-	—	-	-	-	-	—
Chicken-pox	-	-	-	-	—	-	-	-	-	—
Measles	-	-	-	-	—	-	-	-	-	—
Scarlet Fever	-	-	-	-	—	-	-	-	-	—
Whooping Cough	-	-	-	-	—	-	-	-	-	—
Diphtheria and Croup ..	-	-	-	-	—	-	-	-	-	—
Erysipelas	-	-	-	-	—	-	-	-	-	—
Tuberculosis Meningitis ..	-	-	-	-	—	-	-	-	-	—
Abdominal Tuberculosis ..	-	-	-	-	—	-	-	-	-	—
Other Tuberculosis Diseases	-	-	-	-	—	-	-	-	-	—
Meningitis *(not Tuberculous)*	-	-	-	-	—	-	-	-	-	—
Convulsions	-	-	-	-	—	-	-	1	-	1
Laryngitis	-	-	-	-	—	-	-	-	-	—
Bronchitis	-	-	-	-	—	1	-	-	-	1
Pneumonia (all forms) ..	-	1	-	-	1	-	-	-	1	2
Diarrhœa	-	-	-	-	—	-	-	1	-	1
Enteritis	-	-	-	-	—	-	-	-	-	—
Gastritis	-	-	-	-	—	-	1	1	-	2
Syphilis	-	-	-	-	—	-	-	-	-	—
Rickets	-	-	-	-	—	-	-	-	-	—
Suffocation, overlying ..	-	-	-	-	—	-	-	-	-	—
Injury at Birth	-	-	-	-	—	-	-	-	-	—
Atelectasis	-	-	-	-	—	-	-	-	-	—
Congenital Malformations ..	3	-	-	-	3	-	-	1	-	4
Premature Birth	4	2	-	1	7	1	-	-	-	8
Debility, Atrophy, and Marasmus	-	1	1	-	2	-	-	-	-	2
Other Causes	-	1	-	-	1	-	1	-	-	2
	7	5	1	1	14	2	2	4	1	23

Nett Births in the year	Legitimate	456
	Illegitimate	34
Nett Deaths in the year	Legitimate	19
	Illegitimate	4

BOROUGH OF TORQUAY.

Meteorological Report

FOR THE YEAR 1922.

WITH EXTREMES AND COMPARISON WITH AVERAGES OF PRECEDING YEARS.

BY

GEO. E. BODY, F.R., Met. Soc.

Borough Meteorologist.

February 1st, 1923.

Borough Observatory,
Princess Pier,
Torquay.

To His Worship the Mayor, Aldermen and Councillors of the Borough of Torquay.

Gentlemen,

I beg to submit the following Meteorological Report for the year 1922.

Observations have been taken twice daily throughout the year, at 9 a.m. (Local Time), and between 5 and 6 p.m., according to the season of the year. The Readings at 9 a.m. have been posted each morning at the Observatory, Princess Pier, and various stations in the town ; also at St. Marychurch Town Hall. The Evening Readings have been telegraphed, as usual, in code to the Meteorological Office, London, from whence they are distributed to the various Press Agencies for publication in the morning papers. During the Summer Season, morning telegrams were also sent to the Meteorological Office, at their request, giving particulars of the weather at 9 a.m. This information was published in several of the Evening Newspapers.

Press telegrams are forwarded to the "Western Morning News and Mercury" and "Torbay Express" every morning. The Weekly Report besides being sent to the Meteorological Office are also forwarded to the "Torbay News" and "Torquay Directory" as well as several private individuals.

A weekly and monthly review of the type of weather experienced is published in the "Torquay Directory," "Torquay Times," "Torbay Express," and "Evening Herald."

As in past years, the Monthly Report, which shews comparison with previous years, is published in the local papers, also posted up at the Observatory and other places in the town.

Copies are also forwarded to the Royal Meteorological Society, British Rainfall Organisation, and the Torquay Natural History Society. A separate Monthly Report giving our readings twice daily, etc., is sent to the Meteorological Office, London.

Early in the year a new method of exhibiting the daily and monthly records at the Observatory was adopted. This consists of a hinged board on which is printed the various temperatures, rainfall, sunshine, etc.; the dates, days and months being inserted in brass grooves and the data for each day, week and month written on frosted glass. This method, although taking a little longer to post up, is far cleaner and more effective in appearance than pasting the various records to the glass window, which, during damp weather, fell off owing to moisture affecting the paste.

The board and the self-recording Thermograph and Barograph are a source of considerable interest to visitors, for it is quite a common sight during the summer months to see fifteen to twenty persons reading the records displayed and commenting on the amount of sunshine and temperature experienced here compared with other places. Many visitors before planning their daily itinerary wait for the daily forecast to be posted up.

The scheme of insurance initiated by the Pluvias Insurance Company and various newspapers and journals leads to a careful study of the daily rainfall, and many applications have been received for copies of our rainfall statistics.

The observations are also published with others relating to the County of Devon in the Annual "Climate of Devon" Report by the Devonshire Association.

Numerous private enquiries, newspaper articles, etc., concerning the climate here have also been replied to during the year.

Considerably over a thousand telegrams, reports and communications have been despatched.

I am, Gentlemen,

Yours obediently,

GEORGE E. BODY.

OBSERVATORY AND INSTRUMENTS.

The Observatory is situated in North Latitude 50°28, and West Longitude, 3°31, and at an elevation of 12 feet above mean sea level. It is organised and maintained by the Town Council, and is under the supervision of the Meteorological Office, Air Ministry, London.

The several Barometers, Thermometers, and Rain Gauges have been verified at Kew Observatory, and are regularly examined by an Inspector on the staff of the Meteorological Office. Readings are all corrected for instrumental errors.

The Hygrometrical Results are deduced from the daily morning readings of the Dry and Wet Bulb Thermometers by means of Glaisher's Tables.

The averages for Sunshine are the result of 23 years, for Temperature and Rainfall of 45 years, and for Pressure of 37 years' observations.

The following are the instruments and appliances in regular use, those being marked by an asterisk being the property of the Torquay Natural History Society, and lent by them to the town :—

*The **Barometer** is a Fortin Standard, and is read twice daily. All readings are corrected for Temperature and reduced to sea level.

Two **Barographs,** one is placed in the window of the Observatory and the one presented by the late Sir Thomas Bazley, Bart., is exhibited at the entrance to the Pavilion.

Two sets of **Stevenson's Screens,** each containing **Dry** and **Wet Bulb,** and **Maximum** and **Minimum Thermometers.** One of these sets is at Cary Green, where the official Temperatures for the Meteorological Office have been taken.

Rain Gauges are of the Snowdon pattern. They are placed, one on Cary Green, where official records are taken, and one in the Princess Gardens.

Grass Minimum Thermometer placed in Princess Gardens.

Sunshine Recorder is a Curtis Improved Campbell-Stokes instrument. This is situated on the cover shelter at the Southern end of the Princess Pier deck. The Sunshine Cards are forwarded at month ends to the Meteorological Office for examination and verification.

4ft. earth Thermometer is placed in the Princess Gardens Station.

Meteorological Annual Report, 1922.

JANUARY.

The weather was of a very variable character, with high winds reaching to gale force on three occasions, much rain, a little snow, sunshine slightly below the average, a wide range of temperature, but on the whole mild.

The Mean Maximum Temperature was 49.4°F., Mean Minimum 39.5°F., giving a Mean Temperature of 44.5°F., or 1.9°F. above the normal value. The Maximum Day Temperature was 57°F. on the 2nd, and the Minimum Temperature 39.3°F. on the 25th, giving a Mean Daily Range of 9.8°F.

Seven ground frosts were recorded, an unusual occurrence for Torquay.

When our Maximum Temperature stood at 35.5°F., other South Coast resorts fell as low as 25°F.

Rain was above normal, exceeding the average of 46 years by 1.33 inches. Rain was registered on 21 days, but the heaviest falls occurred during the hours of darkness.

The total duration of sunshine was 5.5 hours below the average of 23 years, but 13.65 hours above last January. The Daily Mean was 1.8 hours. The sunniest day was on the 17th, when 7.35 hours were registered. There were 10 sunless days.

The Meteorological Office described the weather throughout the country as very changeable, with exceptionally large fluctuations of temperature. Rainfall was above the normal, with a good deal of snow in the North. Gales and high winds were of frequent occurrence. Sunshine was above normal in the North and below in the South.

FEBRUARY.

The mild weather which had occupied most of January continued until the 6th, when a drop in the temperature occurred. The Mean Temperature exceeded the average by 2.2°F. The Highest Temperature recorded was 56°F. on the 25th, and the Lowest Day Temperature 38.0°F. on the 16th. Whilst the Minimum Night Temperature was 31.6°F. on the 14th, it rose to 52.1°F. on the 24th. Only two ground frosts were registered, *viz.*, 28°F. on the 13th and 27°F. on the 14th.

The month was remarkable for the extremely low Atmospheric Pressure, the Mean for the month being 29.848 inches, compared with a Mean of 29.993 inches for 38 years.

Rainfall was fairly constant and at times heavy, the total exceeding the average by 0.44 inch.

The wind was mainly from the West and at times strong, reaching to gale force on several occasions. East to North-East winds prevailed from the 5th to the 12th, which at times were rather keen.

Sunshine records exceeded the average by 7.7 hours, the total of 92.68 hours being exceeded on four occasions only since 1899.

Meteorological Office description of weather is " Mild and unsettled conditions were general ; rainfall was in excess, except in parts of Scotland, whilst sunshine was below the average in the North and above in the South. Temperatures were below normal in the North and above in the South."

MARCH.

The month opened with characteristic boisterousness, coming in like a lion, but failing to go out like the proverbial lamb. High winds, which at times attained the velocity of a gale, occurred from the 1st to the 8th, the climax being reached during the early hours of the morning of the 8th, when the wind approached the force of a full gale, doing considerable damage to property, but, fortunately, the wind remained South-West to North-West, consequently little damage was caused to shipping in the harbour.

The rapid fall of the Barometer between 10 p.m. and 3 a.m. on the 8th and 9th was exceptional ; the Barograph showed a fall of 0.800 in. in seven hours. The rise was likewise rapid, the reading from the lowest point to the highest was 28.730 to 29.370, or a rise of 0.640 in. in nine hours.

The month was the coldest March for over 10 years. From the 14th to the 31st was exceptionally cold, although the day time temperatures were more moderate, cold nights continued to be frequent. North to North-East winds blew unceasingly, their keenness and harshness being such as is rarely experienced in Torquay.

The Mean Temperature was 1.9°F. lower than normal ; the absolute Maximum was 55.5°F. and absolute Minimum 30.6°F. Duration of bright sunshine was above the average by 8.2 hours.

Briefly the main characteristics of the month were the coldness of the daylight hours, unusual prevalence of Northerly and Easterly winds and dryness of the atmosphere and the number of bright sunny days.

Meteorological Office's description of weather: "The month is described as mild at first, then colder, with much rain, with frequent showers of sleet, snow or hail. Practically all districts throughout the country were affected. Temperatures were below average in the Midlands and the South. Rainfall was in excess in South Wales and the South. Whilst North Ireland registered sunshine above normal, England generally was below."

APRIL.

No equally cold April has previously occurred in the past, and it is probable that the month has also the greatest snowfall of any of its name; opening with a snowstorm that continued from daylight until 3 p.m.

High winds to gale force, accompanied with hail and rain, occurred on eight occasions, the prevailing wind being East to North and North-West, blowing from these directions on no less than 23 days. Such conditions are unprecedented for Torquay in April, but other parts of the country fared considerably worse, where the heavy snow and high winds caused considerable damage.

The Mean Temperature was 2.5°F. lower than the average of 46 years; Barometric Pressure was low, rainfall was the highest on record for April, exceeding the average by 2.22 inches. Hours of sunshine were deficient to the extent of 4.6 hours.

The principle features of the month were the uninterrupted period of Northerly winds, heavy falls of snow, abnormal rainfall, low temperature and persistent high winds, nevertheless, there were many days of ideal springtime weather.

Meteorological Office's description of weather: "Cold and unsettled was the general weather over the greater part of the country. Rain and snow and low temperatures, especially in the North, were prevalent practically throughout the month. Duration of sunshine was deficient."

MAY.

In contrast to April the month was exceptionally sunny. warm, dry and calm, in fact, it created a record in this respect.

The month had a Mean Maximum Temperature of 64.7°F. and Mean Minimum of 48.9°F., giving a Mean Temperature of 56.8°F., being higher by 3.6°F. than the Mean of 46 years. On seven occasions 70°F. and over was registered, but although these readings were high for Torquay in May, London, Bath, Bournemouth and Folkestone were from [illegible] to 10°F. higher.

The highest temperature recorded during the month was 75.1°F. on the 19th and 31st, compared with 91°F. registered in London, 79°F. at Bournemouth, 83°F. at Folkstone and 83°F. at Bath ; thus again proving how definitely cooler Torquay is to other towns during so called heat waves.

Barometric Pressure was generally high and steady, rainfall was deficient to the extent of 1.49 in. Hours of sunshine were 81.0 hours above the average, but the total of 308.45 hours was exceeded in May, 1909, by nearly seven hours. Wind was mainly West and East, but light in character. The month, from the holiday maker's point of view, was almost ideal, there being only one sunless day, and the mean daily amount of sunshine was only 4 minutes under 10 hours.

Meteorological Office's description of weather : "Fine and sunny with some unusually high temperatures. The Mean Temperature throughout England was above normal. Duration of sunshine, with the exception of North-East England, exceeded the average, whilst the rainfall was much below normal."

JUNE.

The warm, sunny weather which had characterised most of May continued well into the middle of June, but no exceptional readings were recorded.

The Mean Maximum Temperature was 66.6°F., Mean Maximum 53.1°F., or a Mean Temperature of 59.9°F. When our Maximum Temperature did not rise above 73.1°F. other South Coast resorts ranged from 74°F. to over 80°F., and during the cold snap, 13th to the 15th, when London and the South-East Coast resorts had Maximum Temperatures from 53°F. to 59°F., our Maximum Temperature was 62.5°F. to 66°F., or a Mean of 7°F. above those districts ; which is another proof of the equability of temperature experienced here.

Rainfall was below the average of 46 years to the extent of 1.5 in. Duration of sunshine was above the average by 28.1 hours, and the 15.2 hours recorded on the 12th exceeded by 0.2 hour any previous daily record for June.

The prevailing winds were North and West, humidity was low and thunderstorms entirely absent, although they were

fairly general throughout the country. The month from the climatic point of view was all that could be desired.

Meteorological Office's description of weather: "The month is described as fine at first, then cool and unsettled. Temperature in the North was below normal, but slightly above elsewhere. Rainfall was deficient, the centre of England receiving less than half the average. Duration of sunshine did not depart to any great extent from the normal."

JULY.

The month was unusually cool throughout, in fact, it was the coolest July recorded since 1895. The Mean Maximum Temperature of 64°F. was the lowest recorded in July for 27 years, and with a Mean Temperature of 58.6°F. it was 3.1°F. lower than the average of 46 years.

Rainfall was much in excess, the total of 3.89 inches being 1.68 in. above the normal. Rain was recorded during the early morning of St. Swithin's Day and on four days throughout the remainder of the month. Sunshine was below the average by 49.8 hours, and humidity was increased by 4%. Wind was from the West, North North-West and South, and gales were recorded on two occasions, an exceptional occurrence for July, but thunderstorms were again absent.

On the whole it was far from summer-like in character, but considerably better than was experienced elsewhere.

Meteorological Office's description of weather : "Cool and unsettled is the description given to this month. Temperature was everywhere deficient. Rainfall over England and Wales was unusually heavy. Sunshine was deficient nearly everywhere, especially in the Southern and Eastern parts of the Kingdom."

AUGUST.

Like the preceding month heavy cloud, low temperature, intermittent rain, and sunshine below the average, were the outstanding features of the month.

The Mean Maximum Temperature was below the average by 1.2°F., the Mean Minimum by 3.1°F., and the Mean Temperature by 1.2°F. The total rainfall amounted to 3.16 in., the normal being exceeded by 0.33 in. Only 138.5 hours of sunshine were experienced, implying a deficiency of 74.0 hours from average. Humidity exceeded the average by 4%. The prevailing winds were West, West North-West and North-West. A thunderstorm of short duration occurred during the night of the 8th. The Barometer was fairly steady and high, but below the average of 38 years by 0.097 in.

Compared with conditions that prevailed in other parts of the country, where heavy thunderstorms, exceptional floods and low temperatures were common occurrences, the holiday makers had little cause to complain.

Meteorological Office's description of weather : "The cool and unsettled weather which had prevailed since the middle of June was maintained throughout the greater part of the month. Rainfall was excessive over most parts of England and Wales, but below normal in Scotland, and temperature and sunshine was everywhere deficient."

SEPTEMBER.

The month failed to maintain its reputation for its cool, bright, sunny days and calm moonlight nights, morning mists and absence of rain. With a total rainfall of 2.94 in., it exceeded the average of 46 years by 0.74 in. Day temperatures were below and night temperatures above the average, the Mean Maximum was 3.4°F., Mean Minimum 0.1°F. above, and Mean Temperature 7.3°F. lower than the average. Hours of sunshine totalled 150 hours or 10.0 hours below the average. The Barometer was fairly steady and only 0.042 in. below normal. Visibility was rather poor. Similar conditions were experienced throughout the country, but were less favourable than here.

Meteorological Office's description of weather : "Cool and unsettled throughout the greater part of the month is the description of the weather for the country. Temperature and sunshine was everywhere deficient and rainfall in excess. Snow fell on the hills of Scotland and Wales."

OCTOBER.

The outstanding features of the month were its abnormal dryness, excess of sunshine and temperature below the average.

No rain fell between the 6th and 28th, an exceptional occurrence for October, and with comparatively light falls on the first few days and last two days of the month the total was deficient to the extent of 2.49 in., and with only three sunless days the total duration of bright sunshine exceeded the average by 9.44 hours.

The Mean Maximum Temperature was 2.8°F., Mean Minimum 0.4°F., and Mean Temperature 1.6°F. below the average.

Easterly and Northerly winds were unusually prevalent and although strong at times they were devoid of keenness or harshness. High winds to gale force were recorded on seven occasions. On the 29th snow was fairly general throughout the country, but only [illegible] and sleet was experienced here. The first frost of the season was registered on the 31st. Mist was recorded on one day, but fog was entirely absent.

Barometric Pressure was fairly steady and high, the low readings coinciding with the approach of high winds or gales. Humidity was lower than the average by 0.8%.

Except for the prevalence of high winds between the 16th and 22nd and the gale, with rain and sleet on the 30th, the month was exceptionally pleasant, dry and sunny.

Meteorological Office's description of weather : "Abnormally dry and sunny, with temperature rather low, was general throughout the country. Rainfall was deficient everywhere, except in parts of Scotland. Sunshine was in excess with the exception of the English Channel. Temperature showed departure of the monthly means from normal from 0.7°F. in Scotland, North, to 2.5°F. in England, South-East and South-West."

NOVEMBER.

The month was exceptional for its mild and light Northerly wind, mild and equable temperature, bright days and absence of heavy rain.

With the Mean Maximum Temperature of 51.6°F. and Mean Minimum of 40.5°F., the Mean Daily Range was 0.8°F. below the normal. A noteworthy feature was the high and steady Barometrical Pressure, the extreme range throughout the month being 0.552 in., whilst the mean exceeded the average of 38 years by 0.318 in.

The total rainfall amounted to 2.64 in., showing a deficiency of 0.87 in. from the average. Between the 11th and the 20th no rain fell. Measurable precipitation occurred on 11 days and a trace or drizzle on three days, giving 16 rainless days.

Humidity was normal. Strong winds were recorded on two days, a gale on one day, whilst there were eight observations when a calm was registered.

Sunshine exceeded the average by 10.3 hours. With only six sunless days there was a mean of 2.9 hours per day, a record few towns in the Kingdom can approach. Two fogs were

registered, but these were light in character, and objects within 1,100 yards were not obscured. On the whole it was a pleasant month.

Meteorological Office's description of weather : " The month is described as unusually dry with much fog inland. Temperature throughout England was below normal, the greatest deficiency being in the South-East. Deficiency of rainfall was general over the British Isles. Sunshine varied considerably in different parts of the British Isles. The departure from normal of the Daily Mean ranged from — 0.80 hours per day in England, North-East, to — 0 40 hours per day in Ireland, North. Fog, especially in the London area, was prevalent."

DECEMBER.

This was an extremely wet month and one of the wettest Decembers since 1896, but the month was noted for its heavy downpours more than for the number of rainy days. Still the total of 6.30 in. is not a record, having been exceeded on seven occasions within the last 26 years, but it is 2.09 in. above the average of 46 years.

The Mean Temperature of 46.1°F. was 2.2°F. lower than the average. No ground frosts were recorded, neither was snow registered, although same was general throughout the country.

Sunshine records showed a deficiency of 2.6 hours from normal, but with only seven sunless days there was a mean of nearly 2 hours per day bright sunshine.

Another feature of the month was the two slight thunderstorms which occurred on the 22nd and 30th, and the occurrence of gales on the 20th, 21st and 22nd.

The Barometer was generally low but fairly steady for the first 16 days, after which it remained unsteady for the rest of the month.

Prevailing winds were West and South-West. Humidity was normal, fogs absent and visibility on the whole, fair.

Considering the time of the year and type of weather prevalent throughout the country, we had little cause to complain ; certainly it was variable in character, but typically British—a little of all sorts without an excess of any.

Meteorological Office's description of weather : " Mild, quiet at first, stormy later, summarised the weather for the month. Practically all districts reported a temperature above normal. With the exception of England, East, the whole

of England and Wales had rainfall more than the average. Heavy falls occurred in many districts and snow, hail and sleet were frequent during the second half of the month. Thunderstorms occurred locally in all parts of the country. Scotland and the Eastern part of Great Britain had an excess of sunshine, whilst the Western part of Great Britain, including the Channel Islands and Scilly, had a deficit. The departure from normal of the Daily Mean Duration of sunshine ranged from — 0.20 hours in Scotland, North, to — 0.47 hours in the Channel Islands and Scilly."

SUMMARY OF YEAR.

The first two months of the winter were mild and sunny, early spring exceptionally cold and wild, with a deficiency of sunshine and an excess of rain, the snow and hail showers and keen wind being without precedent. Late spring and early summer was noted for its high temperature, calm, warm and sunny days and low rainfall. The summer months were generally cool, wet and unsettled, and with hours of sunshine below normal.

Early autumn was wet and cool, but the latter part was comparatively warm, dry, and sunny.

With a total rainfall for the year of 36.94 in. we experienced one of the wettest years for the past 28 years.

Previous wet years were :—1894—43.23 in. ; 1897—36.28 in. ; 1903—41.15 in. ; 1910—38.70 in. ; 1912—37.52 in. ; 1914—38.30 in. ; 1915—41.43 in. ; 1916—41.53 in.

Although the temperature was generally below the average lower readings were recorded in the years 1892 and 1895.

With several months showing a deficiency of sunshine one would conclude the total for the year would be much below the average, whereas it was above the mean for the 10 years, 1911-1920, and exceeded 1912, which had the lowest sunshine recorded for 15 years by 325.64 hours.

Other matters of note during the year under review were the rapid fall and rise of the Barometer on March 8th, the snow and continuous cold winds of April, the two gales in July, the rainless period during October and the occurrence of thunder and lightning and excessive rainfall in December.

BAROMETRIC PRESSURE

Taken at 9 a.m. (Local Time).

In inches and thousandths.

Reduced to 32° F. and Sea Level.

1922.	*Mean* of Month.	Difference from *Mean* of Month.	Highest Reading.	Date.	Lowest Reading.	Date.	Extreme Range of Pressure.
January ...	29·532	−1·209	30·468	11th	29·180	27th	1·288
February ...	29·848	−0·145	30·390	10th	29·220	15th	1·170
March	29·895	−0·037	30·390	11th	29·216	25th	1·174
April	29·928	−0·204	30·552	18th	28·936	3rd	0·616
May	30·031	+0·047	30·568	7th	29·012	22nd	1·556
June.....	30·046	+0·019	30·342	19th	29·666	26th	0·676
July	29·957	−0·050	30·304	11th	29·340	6th	0·964
August.....	29·882	−0·097	30·348	19th	29·478	30th	0·870
September .	29·981	−0·061	30·472	18th	29·082	13th	1·390
October ...	30·032	+0·073	30·352	8th	29·457	30th	0·895
November ..	30·249	+0·318	30·806	16th	29·244	6th	1·562
December ..	29·894	−0·048	30·536	4th	28·826	30th	1·710
Year	29·939	−0·099	30·806	Nov. 16th	28·826	Dec. 30th	1·980

SHADE TEMPERATURES

Taken at 9 a.m. (Local Time)

AT CARY GREEN.

1922.	Maximum *mean.*	Minimum *mean.*	Max. & Min. *mean.*	Difference from Average.	Range *mean.*	Highest.	Date.	Lowest.	Date.
	°	°	°	°	°	°		°	
Jan. ...	49·4	39·5	44·5	+1·9	9·8	57.0	2nd	30·3	25th
Feb. ...	49·9	41·1	45·5	+2·2	8·8	56·0	25th	31·6	14th
March .	48·6	39·0	43·8	−1·9	9·6	55·5	4th	30·6	10th. 21st
April . .	51·7	39·9	45·8	−2·5	11·8	56·9	20th	32·6	5th
May ...	64·7	48·9	56·8	+3·6	15·8	75·1	9th & 31st	39·1	13th
June...	66·6	53·1	59·9	+1·4	13·5	73·1	2nd & 10th	46·7	29th
July ...	64·0	53·2	58·6	−3·1	10·8	70·3	25th	49·1	15th
Aug....	63·4	53·4	58·4	−1·2	9·9	69·0	18th, 22nd	47·1	29th
Sept. . .	62·3	52·4	57·3	−1·7	10·0	71·1	20th	44·5	10th
Oct. ...	55·2	46·7	50·9	−1·6	8·4	63·0	13th	36·0	28th
Nov....	51·6	40·5	46·1	−1·3	11·2	57·8	10th	33·1	14th, 26th
Dec. ...	49·9	42·4	46·1	−2·2	7·5	54·0	13th	34·1	11th
Year	56·4	45·9	51·1	−0·7	10·6	75·1	May 9th & 31st	30·3	Jan. 25th

DURATION OF BRIGHT SUNSHINE

In hours and tenths of an hour,

As recorded by the Campbell-Stokes' Standard Instrument.

1922.	Total Bright Sunshine.	Difference from Average.	Greatest Amount in one day.	Date.	Sunless Days.
	Hours.	Hours.	Hours.		
January	56·73	− 5·55	7·35	17th	9
February	92·68	+ 7·70	8·0	10th, 11th	6
March	127·10	− 8·20	10·80	23rd	7
April	184·2	− 4·6	11·8	18th	2
May	308·45	+81·0	14·9	29th	1
June.....	255·6	+28·1	15·2	12th	1
July.....	188·17	−49·8	14·55	18th	2
August.....	138·57	−74·0	13·15	23rd	4
September.....	150·0	−10·0	12·0	10th	6
October	125·24	+13·6	9·7	13th, 14th	3
November.....	89·50	+10·3	8·4	4th	6
December.....	55·3	− 2·6	5·0	26th	7
Year.....	1771·54	−29·26	15·2	June 12th	54

RAINFALL

(In inches and hundredths)

Taken at CARY GREEN STATION.

1922.	Total Amount.	Difference from Average.	Rainy Days.		Greatest fall in 24 hours.	Date
			Days of 0·01 and upwards	Days of 0·04 and upwards		
January ...	4·59	+1·33	5	16	0·68	20th
February ...	3·25	+0·44	1	17	0·54	28th
March	3·50	+0·76	5	15	0·66	31st
April	4·36	+2·22	4	16	0·99	13th
May	0·40	−1·49	3	4	0·15	16th
June.....	0·49	−1·50	7	3	0·15	25th
July	3·89	+1·68	7	12	1·7	5th
August.....	3·16	+0·33	3	11	0·84	6th
September	2·94	+0·74	5	8	0·088	12th
October ...	1·42	−2·49	2	3	0·58	29th
November	2·64	−0·87	1	10	0·74	6th
December	6·3	+2·09	3	16	1·36	21st
Year.....	36·94	+2·96	50	131	1·70	July 5th

HUMIDITY, CLOUD, OZONE, AND WIND.

1922.	Humidity.			Cloud	Ozone. Percentage of possible.	Wind.	Grass Temperatures.		
	Dry Bulb *mean.*	Wet Bulb *mean.*	Relative Humidity.	Cloud *mean* 1 to 10.	*Mean* Daily Amount.	Prevailing Quarters.	Mean.	Lowest.	No. of days at or below 30°
January	45·0	42·7	84	7	63	W., N., S.	35·8	26·0	6
February	45·1	42·9	84	5	70	W., E., NW.	37·8	27·0	2
March ...	43·9	40·9	78	6	66	N., W., NNE.	36·2	26·0	8
April ...	45·6	41·8	73	5	72	E., N., NNE.	36·1	27·5	3
May	56·8	51·9	71	3	60	W., E., S.	45·0	34·0	0
June.....	60·3	55·5	72	4	68	N., W., E.	50·6	43·1	0
July	58·6	55·2	80	6	55	W., WNW.	50·5	45·2	0
August...	58·8	55·9	82	7	54	W., WNW.	50·8	44·0	0
Sept. ...	56·6	54·1	84	6	47	N., W., SW.	49·9	41·5	0
October	50·6	47·7	79	5	50	E., N., NE.	43·7	31·1	0
Nov.....	46·2	44·2	85	5	26	N. W., NE.	36·5	30·0	1
Dec.	46·1	44·1	88	7	43	W., SW., N.	35·1	32·0	0
Year...	51·1	48·0	79%	5	56	W., N., E.	42·3	33·9	20

MONTHLY MEANS FOR THE TEN YEARS 1911–21.

MONTHS.	Temperature of Air.				Humidity.	Hours of Sunshine.	Cloud.	Rain.	
	Maximum.	Minimum.	Mean daily range.	Mean.				Days it fell.	Inches.
January	47·3	36·8	10·5	43·1	87	57·8	7	17	3·37
February	48·4	39·4	9·0	43·9	85	73·1	7	16	3·33
March	50·3	39·5	10·8	45·0	82	121·2	5	18	5·38
April	54·9	42·6	12·3	48·8	76	189·8	5	13	1·65
May	61·5	49·0	12·5	55·3	74	220·6	5	10	1·60
June	64·8	52·2	12·6	58·5	73	231·5	5	12	1·66
July	68·0	55·6	12·4	61·9	74	223·3	6	13	2·07
August	68·3	55·2	13·1	62.3	76	200·7	5	14	2·99
September	64·4	52·9	11·5	58·4	80	160·4	5	12	2·27
October	58·2	48·1	10·1	53·2	83	113·0	6	18	3·29
November	54·1	42·1	12·0	47·1	83	76·5	6	15	3·03
December	49·6	40·8	8·8	45·2	86	66·1	6	21	5·71
Year	57·5	46·2	11·3	51·9	79	1734	5·6	179	36·35

DIRECTION OF WIND, FOR 1922.

MONTHS.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
January	13	2	4	2	8	1	16	1	3
February	2	3	11	2	1	2	22	4	—
March	17	6	4	—	2	5	9	2	—
April	8	2	10	—	2	3	8	7	1
May	1	1	18	1	5	1	20	5	5
June	18	2	8	3	2	1	13	2	—
July	4	—	—	1	7	4	27	2	—
August	2	—	4	3	1	2	16	6	3
September	13	1	9	1	4	8	11	3	2
October	6	4	33	1	—	3	5	—	2
November	24	4	—	—	2	1	7	4	8
December	9	—	1	1	4	11	16	2	5
Year	117	25	102	15	38	42	170	38	29

METEOROLOGICAL ABSTRACT, 1922.

Highest Shade Temperature	75·1
Lowest Shade Temperature	30·3
Mean Maximum Temperature	56·4
Mean Minimum Temperature	45·9
Mean Temperature	51·1
Mean Range of Temperature	10·6
Total Rainfall	36·94
Hours of Bright Sunshine	1771·54
Sunny Days	311
Mean Humidity, percentage of possible ...	79%
Mean Ozone	56%
Prevailing Wind	W.